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phlets of the Western Reserve & No. Ohio Hist. Soc., containing the Indian narrative of Judge Hugh Welch, and Wyandotte missions in 1806 and 1857, both edited by Mr. C. C. Baldwin. The former is a letter to General Garfield on the subject of Indian education, which takes a rather gloomy view of the subject. Of the latter, as well as of all the publications of this society, we take great pleasure in saying that the permanent records of an association can be valuable in the highest degree without being in the least costly or pretentious.

THE CENSUS OF ALASKA.—The *New York Herald* for January 10 and 11, gives a detailed account of the exploration of the Alaskan peninsula for the purpose of enumerating the population, and of studying the habits of the natives. No one better fitted for this service could have been found than Mr. Petroff, who adds to his thorough knowledge of the Russian and English, a practical acquaintance with ethnology, acquired while assisting Mr. Bancroft in the preparation of his great work on the native races of the Pacific States. Mr. Petroff will prepare an elaborate paper on Alaska for the next census and will contribute a memoir to the volumes of the Ethnological Bureau.

THE DAVENPORT ACADEMY, IOWA.—The *Davenport Daily Gazette* for January 6, 1881, contains the record of the annual meeting of this thriving society. The retiring president, Mr. Pratt, devoted the annual address to the discussion of the mound-builders. Mr. J. Duncan Putnam was elected president for the ensuing year, and Dr. C. C. Parry, corresponding secretary. Notice is given that the printing of volume III will be resumed at once.

GEOLOGY AND PALÆONTOLOGY

APPARENT GLACIAL DEPOSITS IN VALLEY DRIFT.—While collecting facts regarding the question whether there was in Maine a re-advance of the glacier subsequent to the deposition of the sedimentary Champlain clays and valley drift, the writer observed certain large boulders lying on or in the valley drift which seemed too large to have been deposited by any of the ordinary forces of valley transportation. Sometimes numbers of boulders were found in pell-mell masses quite morainal in appearance, and I was for a time inclined to regard them as glacial. The smaller stones and boulders might readily be supposed to have been carried down in spring by floating blocks of ice, but the largest of them staggered me, until one day I found a boulder weighing not far from one hundred tons lying on the undisturbed silt of the present flood plain of the Piscataquis river. Its history was as follows: Ever since the first settlement of the country that rock had stood right in mid-channel, a constant object of apprehension and vituperation to the lumbermen, for many were the "jams" of logs which it had caused, some of them of large size. But nothing

moved it perceptibly until a few years ago, when, during a mid-winter flood, a great ice gorge formed against it and a very high dam soon extended to a considerable distance on each side of the river. When, at last, the ice rushed downwards with irresistible force it wrenched the offending rock from its bed in the till, pushed it up a steep bank twelve feet high, and left it two hundred feet back from the river, together with large piles of stones and boulders. The flood plain, being frozen, suffered but little erosion. Many similar facts have since been observed. Evidently if blocks of granite ten or more feet in diameter can be tossed about like this, then in the case of narrowish valleys subject to floods and ice gorges, the presence in the valley drift of erratics and masses resembling moraines is to be received with great caution as a proof of glacial conditions, unless the deposits are very abundant and continuous, or are supplemented by striæ or other positive indications. So also the development of the aasar or kames seems to show the frequency and great transportive power of ice gorges in the channels of the glacial rivers. During the decadence of the great glacier, transportation of this kind would probably be active all along the line of the terminal moraine, more particularly in the valleys of those streams whose headwaters were in the region covered by the ice, such, for instance, as the valleys of the Delaware, Susquehanna and Allegheny. At least they deserve careful investigation for such deposits.—*George H. Stone, Kent's Hill, Maine.*

EXTINCT PALÆOZOIC FISHES FROM CANADA.—At a recent meeting of the Natural History Society of Montreal, Mr. Whiteaves read a paper on "Some new and remarkable fossil fishes from the Devonian rocks of the northern side of the Baie des Chaleurs." He commenced by remarking that until last year a long strip of the northern side of the bay had been mapped as belonging to the conglomerates of the Bonaventure formation, which form the base of the Carboniferous system. Last year, however, Mr. R. W. Ells, of the Geological survey, discovered a fine specimen of a fossil fish belonging to the genus *Pterichthys*, of Agassiz, in Escuminac bay, a discovery which led to a careful re-examination of the locality by Messrs. R. W. Ells, T. C. Weston, and A. H. Foord. From the researches of these gentlemen, we now know that at this point Devonian rocks crop out from under the Bonaventure conglomerates, and further, that these Devonian rocks hold a rich and extremely interesting series of fossil plants and fishes. The vegetable organisms will be described by Principal Dawson at some future time, but the fossil fishes, of which many specimens were exhibited at the meeting, were shown to belong to the following genera and species:—1. *Pterichthys*. A fine species, supposed to be new, which has been described in the August number of the *American Journal of Science* as *Pterichthys canadensis*. 2. *Diplacanthus*; a cluster of fin rays only, of a small

form, possibly referable to this genus. 3. *Cheirolepis*. A beautifully preserved fossil fish, about a foot in length, which cannot at present be distinguished from the *Cheirolepis cumingia* of Agassiz, which was so named in honor of Lady Gordon Cuming, of Altyre. 4. *Phaneropleuron*, nov. sp. 5. *Tristichoporus*, nov. sp. 6. Portion of the vertebral column of the above species of *Tristichoporus* shewing the neural and hæmal spines and the processes which support the rays of the tail, also the two ischiatic bones with the metatarsals attached, which must have formed the bases of two enormously developed ventral fins.

THE MILLSTONE GRIT IN ENGLAND AND PENNSYLVANIA.—In the February number of the *Amer. Journ. Science*, Mr. Chance, of the Geological Survey of Pennsylvania, calls attention to the remarkable parallelism between the stratification of the Millstone grit in Pennsylvania and England. He gives the following comparative sectional tables from the reports of the two countries:

Yorkshire.	Pennsylvania.
Rough rock.	Homewood sandstone.
Shales (sporadic coals).	Mercer coal group.
Second grit.	Conoquenessing Upper sandstone.
Shales (coal).	Quakertown coal.
Third grit.	Conoquenessing Lower sandstone.
Shales (coal).	Sharon coal.
"Kinder Scout" grit.	Sharon or Ohio Conglomerate.

Over large areas this nomenclature is applicable to all vertical sections in both Yorkshire and Western Pennsylvania. The top and bottom sandstones are especially durable and constant, and form "key rocks" in both countries, for the determination of other horizons.

A NEW FOSSIL BIRD.—The Amyzon Shales of the South Park of Colorado have furnished many fine specimens of insects, fishes and leaves, and a very fine bird, with feathers well represented. The latter was described by Mr. J. A. Allen as a finch, under the name of *Palæospiza bella*. It is interesting to learn that another bird has been procured from the same bed. The specimen includes the posterior half of the body including the hind legs. The tail feathers are preserved in place. The characters are those of a wading bird, and Professor Cope describes it in the current number of the Bulletin of the U. S. Geological Survey of the Territories, of Dr. Hayden, under the name of *Charadrius shepardianus*. It is dedicated to the zoölogical artist, Edwin Shepard of Philadelphia.

THE STREAM-TIN DEPOSITS OF BLITONG.—Dr. Martin of Leyden has determined the age of the Stream-tin deposits of Blitong (or Biliton), by means of an extensive series of *Mollusca* obtained from it. They number sixty-one species, of which only two are certainly new to science. The remainder are all recent species, excepting a *Cerithium*, which has hitherto been only known from

the strata of Mount Sela in Java. *Prionastræa tesserifera* Ehrbg. exists at present only in the Red sea, but the remaining species are found in the sea of Blitong. The strata are determined to be posttertiary.

GEOLOGICAL NEWS.—Professor Marsh shows that the neural cavity of the sacrum in *Hyposirhophus* (*Stegosaurus*) *ungulatus* is ten times the size of the brain case of the skull of the same animal.—In the Acts of the Tuscan Academy of Sciences for November, 1880, M. De Stefani publishes a systematic table of the geological formations of the Apuan Alps. The principal formations are the Eocene, the Lias and the Trias.—The following statistics of the output of crude fertilizers from the beds of Beaufort and Charleston, South Carolina, is furnished by Mr. E. Willis: 1875, 122,790 tons; 1876, 132,626 tons; 1877, 163,220 tons; 1878, 210,328 tons; 1879, 199,566 tons; 1880, 190,763 tons; 1881 to Feb. 1st, 173,168 tons.—The United States Geological Survey of the Territories under Dr. Hayden, in closing its work, has just issued three geological maps of the adjacent parts of Wyoming, Utah, Idaho and Montana. They represent the regions of Bear lake, the water shed of the Snake and Green rivers, and the Yellowstone Lake region. They are beautifully executed.

GEOGRAPHY AND TRAVELS.¹

FRANZ-JOSEF LAND REVISITED.—The Arctic explorer, Mr. B. Leigh Smith, sailed in the steam yacht *Eira* from Peterhead, Scotland, on the 19th of June, 1880, on a voyage of discovery. We condense from reports in the *London Times* and *Illustrated London News* the following account of his very successful trip.

The *Eira* is a steam vessel of three hundred and fifty tons gross, measuring one hundred and thirty-five feet in length by twenty-five feet of beam and carried a crew of twenty-five all told.

The island of Jan Mayen was reached about June 29th, and was found almost encircled with ice. Sailing along the edge of the main pack they endeavored to reach the east coast of Greenland, near Cape Bismarck, the farthest point reached by the Germans. On the 2d and 3d of July, they got among the bladder-nosed seals and shot over three hundred of these animals. They worked in towards the west until the 9th in 75° 40' latitude; but the weather was foggy, and all the time the ice was getting closer and heavier, some of the floes met with being very large. On the 9th nothing could be seen from the crow's nest but ice closely packed, and the idea of going further west had to be given up. It was very discouraging to have to work their way back again; but it had to be done. They reached the open sea again on the 11th.

They steered northward again on the 13th, and on the 16th

¹ Edited by ELLIS H. YARNALL, Philadelphia.